Long-term variability of Eta Carinae

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During the last 50 years, Eta Carinae has increased its brigthness at variable rates. For instance, the central source presented V=8 from 1910 to 1940, when it suddenly increased its brightness by 1 magnitude in a few years. Since then, the brightness has increased almost linearly with time at a rate of approximately 0.03 mag per year. However, after the spectroscopic event of 1997.9, the rate increased to 0.2 mag per year and remained so until mid-2006, when a drop in the brightness of the central source was observed (almost 30 per cent in less than one year!). In this work we present the results of our study on the long-term variability of the central source of Eta Car, showing that, while the central source is getting brighter, the equivalent width of the lines are getting weaker from cycle to cycle. Besides, our results indicate that at least in the last 4 events, the behaviour of the high- and intermediary-excitation lines near the spectroscopic event do not changed significantly.